

IN THE CLAIMS

Please amend the claims as follows:

1. (Currently Amended) An integrated circuit comprising:

a fail safe sensor;

a programmable thermal sensor;

halt logic to halt operation of the integrated circuit in response to the fail safe sensor indicating that a pre-programmed fixed threshold temperature has been exceeded; and
clock adjustment logic to control temperature of the integrated circuit in response to the programmable thermal sensor indicating that a programmable threshold temperature has been exceeded by decreasing a clock frequency of the integrated circuit.

2. (Cancelled)

3. (Original) The integrated circuit of Claim 1 wherein the halt logic is to inhibit operation of the integrated circuit by stopping a clock for the integrated circuit.

4. (Original) The integrated circuit of Claim 1 wherein the halt logic protects the integrated circuit without software control.

5. (Currently Amended) The integrated circuit of Claim 1 comprising:

a plurality of programmable thermal sensors placed across the integrated circuit;

an averaging mechanism in communication with the ~~fail-safe~~ plurality of
programmable thermal sensors to calculate an average temperature from the plurality of
programmable thermal sensors.

6. (Currently Amended) The integrated circuit of Claim 1 ~~further comprising wherein~~
~~the clock adjustment logic in communication with the fail-safe sensor is further~~ to control ~~the~~
temperature of the integrated circuit by increasing ~~and decreasing a~~ the clock frequency of the
integrated circuit.

7. (Currently Amended) The integrated circuit of Claim 1 ~~further comprising wherein~~
~~the clock adjustment logic in communication with the fail-safe sensor is further~~ to execute
instructions to provide closed loop control of the integrated circuit clock frequency, thereby
automatically reducing the temperature when overheating occurs.

8. (Cancelled)

9. (Currently Amended) The integrated circuit of Claim 1 further comprising
threshold adjustment logic ~~in communication with the fail-safe sensor~~ to increase the
programmable threshold temperature value to a new threshold temperature value in response
to the ~~fail-safe~~ programmable thermal sensor indicating that the threshold temperature value
has been exceeded.

10. (Currently Amended) The integrated circuit of Claim ~~[[8]]~~ 2 wherein the
threshold adjustment logic is further to lower the new threshold temperature to detect
decreases in temperature.

11. (Currently Amended) The integrated circuit of Claim 1 further comprising an
interrupt handler to display information regarding a ~~temperature sensed~~ temperature ~~by the~~
~~fail-safe sensor~~ to a user of the integrated circuit upon generation of an interrupt in the fail
safe sensor or the programmable thermal sensor.

12. (Currently Amended) A method comprising:
sensing a temperature of an integrated circuit using a first sensor provided on the
integrated circuit;
sensing the temperature of the integrated circuit using a second sensor provided on the
integrated circuit;

halting operation of the integrated circuit in response to sensing with the first sensor
that a pre-programmed fixed threshold temperature has being exceeded; and

controlling a clock frequency of the integrated circuit by decreasing the clock frequency in response to sensing with the second sensor that a programmable threshold temperature has been exceeded.

13. (Cancelled)

14. (Original) The method of Claim 12 wherein halting operation comprises inhibiting operation of the integrated circuit by stopping a clock for the integrated circuit.

15. (Original) The method of Claim 12 wherein halting operation comprises halting operation of the integrated circuit without software control.

16. (Currently Amended) The method of Claim 12 ~~further comprising wherein~~ controlling ~~the temperature of the integrated circuit by~~ further comprises increasing and ~~decreasing a~~ the clock frequency of the integrated circuit in response to the sensed temperature.

17. (Currently Amended) The method of Claim 12 ~~further comprising wherein~~ controlling further comprises executing instructions to provide closed loop control of the integrated circuit clock frequency in response to the sensed temperature.

18. (Cancelled)

19. (Currently Amended) The ~~integrated circuit~~ method of Claim 12 further comprising displaying information regarding a sensed temperature to a user of the integrated circuit in response to generation of an interrupt in the first sensor or the second sensor.

20. (New) The integrated circuit of claim 1, wherein the integrated circuit is a microprocessor.